UNISOL Food & Dairy UF Elements

Sanitary High Temperature UF Spiral Wound Elements

SH UF Series

Description

UNISOL sanitary UF is suited for process separations, particularly applications involving protein concentration to high solids levels. In these applications, a tighter ultrafiltration membrane is often used to maximize product yield. It is available in a wide variety of element designs for food, dairy and process separations as well as water purification. SH Series are designed with continuous high temperature operation up to 80°C (176 °F).

Characteristics

Membrane	Material	MWCO (Da)	Outer wrap
UPS003	PES	3,000	Net wrap
UPS005	PES	5,000	Net wrap
UPS010	PES	10,000	Net wrap
UPS020	PES	20,000	Net wrap
UPS150	PES	150,000	Net wrap
Regulatory Status		Compliant with US FDA CFR Title 21, EC Reg. No. 1935/2004, and EU Reg. No. 10/2011. Halal certificate by the Islamic Food and Nutrition Council of America (IFANCA). Kosher certificate by Committee of Kashrut.	

Limits

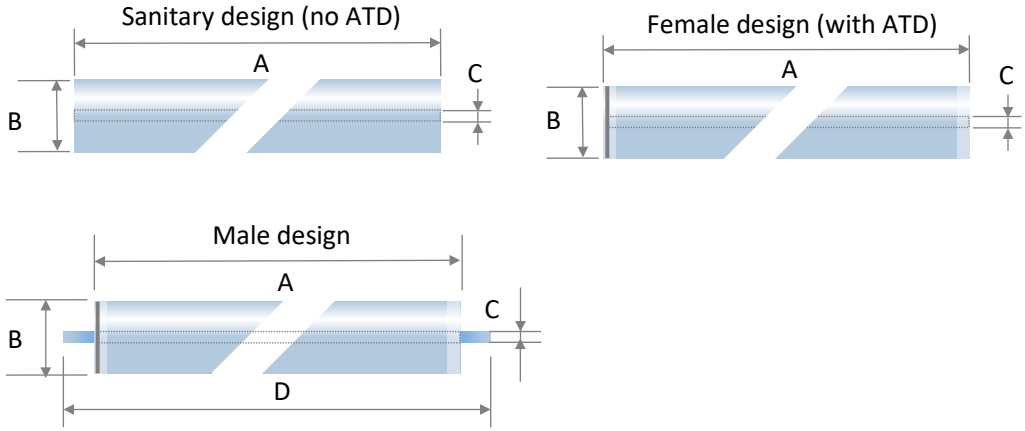
Max Operating Pressure	6.9 bar (100 psi) at 80°C (176°F)
Max Pressure Drop	1.0 bar (14.5 psi) per element @30°C (86°F) 0.8 bar (11.6 psi) per element @70°C (158°F) 0.6 bar (8.7 psi) per element @80°C (176°F)
Max. Operating Temperature	80 °C (176 °F)
Operating pH range	3 – 11
Cleaning pH Range	2 – 12
Cleaning Chlorine Tolerance	200ppm for disinfection at PH ≥ 10.5

Area ft^2 (m^2)

Spacer	31mil (B)	46mil (C)	65mil (E)	80mil(F)
1812	2.1 (0.19)	1.8 (0.17)	/	/
2540	24 (2.2)	19 (1.8)	/	/
3838	72 (6.7)	58 (5.4)	45 (4.2)	/
3840	81 (7.5)	62 (5.8)	/	/
4338	102 (9.5)	81 (7.5)	/	/
6338	226 (21)	172 (16)	142 (13.2)	119 (11.1)
6438	226 (21)	172 (16)	142 (13.2)	119 (11.1)
8038	370 (34)	290 (27)	225 (20.9)	180 (16.7)
8040	355 (33)	269 (25)	/	/

(1) For the purpose of improvement, specifications may be updated periodically
(2) Consult UNISOL Membrane Technology when intend to operate at elevated pressure, temperature, concentrations.
(3) For the product name, please refer to the annex in the last page

Dimensions



Size mm (inch)	A[1]	⌀B[2]	⌀C[3]	D	Permeate tube	ATD
1812	305 (12)	46 (1.8)	16 (0.629)	/	Female	NO
2540	965 (38)	62 (2.4)	19 (0.748)	1016 (40)	Male	With
3838	965 (38)	96 (3.8)	21.1 (0.831)	/	Female	NO
3840	984 (38.8)	96 (3.8)	21.1 (0.831)	/	Female	NO
4338	965 (38)	109 (4.3)	21.1 (0.831)	/	Female	NO
6338	965 (38)	160 (6.3)	28.9 (1.138)	/	Female	NO
6438	965 (38)	162 (6.4)	28.9 (1.138)	/	Female	NO
8038	965 (38)	200.5 (7.9)	28.9 (1.138)	/	Female	NO
8040	1016 (40)	200.5 (7.9)	28.9 (1.138)	/	Female	With

[1] Tolerance: ±0.5 mm
[2] Tolerance: -2~0 mm
[3] 2540/3840/4040-M tolerance: 0~+0.1mm. 1812/3838/4038 tolerance: ±0.1mm. 6338/8038/8040 tolerance: -0.2~0mm

Handling

Operation. Stated operational conditions are valid and the rules for installation, cleaning, water and preservation have to be adhered. UNISOL approved cleaning detergent, anti-foam, polymers, other chemicals and filter-aids lubricants can be applied only. For further questions, do not hesitate to contact our service engineer.

Lubricants. During installation, use only water or glycerin to lubricate seals. The use of petroleum or vegetable-based oils or solvents may damage the element and void any warranty.

Preservation and Storage. Plan ahead to use new membranes. The element should be stored in a sealed bag, at 4 – 30 °C (39 – 86 °F). Storage solutions should be made with: 1 % w/w sodium metabisulfite.

Chemical Exposure. Residual chlorine concentration during cleaning cycle (CIP) should be 150 ppm @ pH 10.5 or higher. Chlorine concentration should never exceed 200 ppm.

Cleaning. UNISOL modules may be put into production after having gone through the first cleaning prescribed by UNISOL on product packing notes or given differently by UNISOL.

Annex

Nomenclature: SH-UPS020–8038-B

SH	UPS020	8038	B
Design/Application	Membrane	Diameter & Length	Feed spacer
SH Sanitary Design (High Temperature)	UPS003 UPS005 UPS010 **UPS020** UPS150	3838 3840 4338 6338 6438 **8038**	**B: 31mil /0.8mm (diamond)** C: 46mil/1.1mm (diamond) E: 65mil /1.6mm (diamond) F: 80mil /2.0mm (diamond)